infopia

CE 0434

User's Manual

for model **DT-060**

Infrared forehead Thermometer

CONTACTLESS THERMOMETER

Thermo Checker

The Infopia DT-060(Thermo Checker) non-contact thermometer features the advanced technology to measure body temperature in just one second without touching the skin. With the NEW DT-060, parents do not have to wake a sleeping child. This non-contact thermometer allows you to obtain the temperature of your child or baby easily, accurately and instantly without disturbing him/her at all. Furthermore, It's totally hygienic, so there's no worry for cross contamination.
DT-060 is an affordable thermometer that is superior to traditional methods of reading temperature.

IN THIS MENUAL

Important Warnings/medical Disclaimer 3
Introduction 3
What is body temperature ? 4
Cautions for using 5,6
Characteristics of the product 6
Product description 7
How to measure 8,9
Changing the measurement mode 10
Buzzer on/off 10
Battery replacement & installation 10
Trouble Shooting 11
Memory 12
Storage after use 12
Specifications 13
Label in storage case or Inner box 14
Label in product's battery cover 14
Explication of symbols 15
Purpose of use 15
Warranty card 15
Guidance and manufacturer''s declaration 16
Guidance and manufacturer''s declaration - electromagnetic immunity 17
Guidance and manufacturer''s declaration - electromagnetic immunity 18
Recommended separation distances between portable and mobile RF communications equipment and the DT-060 19

IMPORTANT WARNINGS/MEDICAL DISCLAIMER

Before using your thermometer, you should read and understand all instruction and follow all warnings.

Information in this manual is provided for informational purpose and this manual and this manual and product are not meant to be a substitute for the advice provided by your own physician or other medical professional.

You should not diagnosing or treating a health problem or disease, or prescribing any medication.

If you have or suspect that you have a medical problem, promptly contact your healthcare provider.

For specific information about your own body temperature, including what measurement is considered normal for you, CONSULT YOUR PHYSICIAN.

INTRODUCTION

Infopia infrared thermometer offe rs easy, safe, accurate and fast temperature measurement in the forehead.

Infopia infrared thermometer is more convenient and safer than an oral thermometer, as it is unaffected by factors such as talking, eating, drinking and smoking.

WHAT IS BODY TEMPERATURE ?

Body temperature refers to the internal temperature of the body (core temperature). Normal human body temperature means that of a healthy person. Body temperature is likely to change depending on when, where and to whom the measurement is made. There are different factors that have effects on body temperature, including time of the day, temperature of surrounding place, and level of activity of a person. Different parts of the body (such as mouth, armpit, rectum, ear, and forehead) have different temperatures, and improper measurement may cause different body temperature. In addition, smoking, ovulation, pregnancy, and age can also affect body temperature. It is, therefore, recommended that a person keep a record of his or her own normal body temperature after measuring several times at the same condition. Measurement in thick clothes in a warm day or after workout can make body temperature a bit higher. What makes body temperature constant is central nerves in the hypothalamus of the brain. If body temperature rises, central nerves in the hypothalamus inhibit body temperature rise by expanding skin's blood vessels and making sweat glands sweat more than usual, which cools body off. On the contrary, at lower body temperature, they block heat loss by contracting blood vessels, which inhibits blood flow, and stopping sweating. Human body temperature is always constant due to balancing heat gain between heat loss.

Normal temperature ranges - by point of measurement [1]	
Axillary	34.7~37.3℃
Oral	35.5~37.5℃
Ear	35.8~38.0℃
Rectal	36.6~38.0℃

Normal temperature ranges - by age [2]	
0~2years	36.4~38.0℃
3~10years	35.5~37.5℃
11~65years	35.8~38.0℃
> 65years	36.6~38.0℃

1) Chamberlain, J.M., MD, and Terndrup, T.E., MD, "New Light on Ear Thermometer Readings", Contemporary Pediatrics; March, 1994.

2) Chamberlain, J.M., MD, and Terndrup, T.E., MD, "Determination of Normal Ear Temperature with an Infrared Emission Detection Thermometer", Annals of Emergency Medicine; Januay 1995.

A person's body part temperature range shown above is summed up from excerpts of data in clinical tests, and minimum and maximum body part temperature may be varied from person to person.

⚠ CAUTIONS FOR USING

We appreciate you buying Infopia ThermoChecker.

(1) Before using your thermometer, you should read and understand all instructions and follow all warnings.

(2) Please examine this product regularly and check its working state.

(3) Please keep out of children.

(4) The temperature of left/right foreheads can be different. Measure the temperature on the same direction of forehead.

(5) If the subject of measurement is coming from outside or the thermometer is shifted to the place under the different temperature, measure the body temperature after 30 minutes or more.

(6) Avoid the measurement right after an exercise or shower.

(7) Avoid the measurement under the air-conditioner or heater.

(8) If Err is displayed, press ON button again for the normal measurement.

(9) This User's Manual has been prepared to deliver knowledge about how to use this

(10) product, so contents in it and the product itself do not override medical experts' and doctors' recommendation or advice.

(11) Do not use the thermometer as the purpose of diagnosis or treatment of illness.

(12) If an illness or medical problem is occurred or doubted, consult it with a medical professional or a doctor.

(13) Do not contact the unit to others except the user.

(14) If the thermometer figure is absent from LCD screen or the measurement is unstable, it displays "Err" (Error).

(15) Be careful that foreign objects, such as a hair etc., should not be put between the thermometer and forehead (or skin). They may lead to improper measurement result.

(16) The probe with a sensor is very delicate, so it has always to be kept clean and intact.

(17) When you measure temperature of infants, if they struggle, you make them calm first and then measure again. Otherwise the thermometer would give out inaccurate measurement result because of variable distance between skin and the sensor.

(18) Be careful that infants should not suck nor touch the probe and batteries with wet hands.

(19) Please do not use at a place where possible malfunction is expected near the devices (like microwaves) releasing high electromagnetic wave.

(20) Please keep batteries out of compartment of the thermometer when the thermometer is not in use for a long period. Batteries may corrode or battery liquid

be released.

(21) Please dispose of empty batteries at appropriate collection sites to protect environment.

(22) MEDICAL ELECTRICAL EQUIPMENT needs special precautions regarding EMC.

(23) It is highly recommended that customers should be careful not to contact Sensor part with any finger or other object. Sensor part is extremely sensitive to external stimuli.

Infopia ThermoChecker provides an easy and accurate way to meas ure body temperature. And it is very good for children because it dramatically reduces displeasure and danger of infection that may be carried through oral or ear thermometers.

CHARACTERISTICS OF THE PRODUCT

(1) This product is a contactless medical thermometer that reduces inconvenience from direct contact with your body in using an ear thermometer, which measures body temperature in the ear, or a forehead thermometer, which measure on the forehead, and risk of a secondary infection by contact or danger of contagion.

(2) It can also be used for measuring temperature of water, atmosphere, baby bottles, etc., as well as human bodies.

- For baby bath water : 38 to 40 ℃
- For indoor when bathing a baby : 24 to 27 ℃
- For baby bottles : 36 to 40 ℃
- For a baby when in indoors : 24 to 26 ℃

(3) 10 Memory storage

Up to 10 temperature measurement can be stored that will allow you to compare with prior measurements.

(4) Automatic Shut-off

Infopia infrared thermomet er will turn off automatically within 30 seconds after reading measurement.

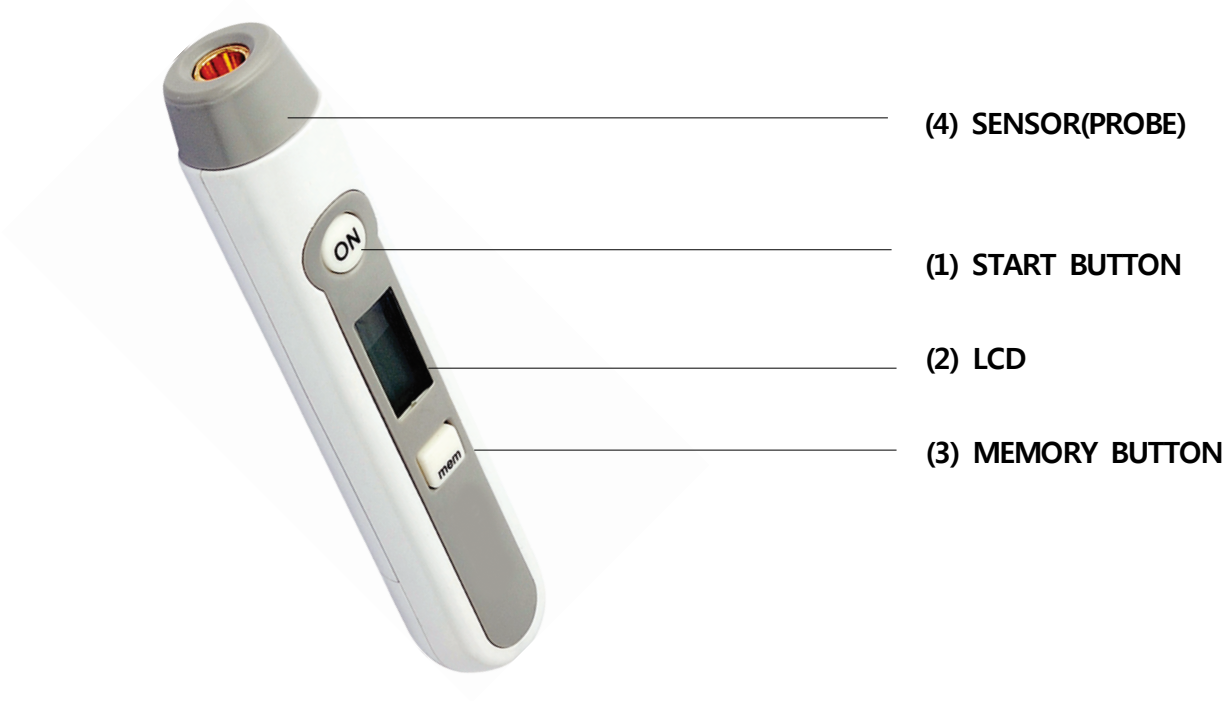
(5) Lightweight & Compact Design

Ergonomic design and 50g lightweight enable comfortable and easy use.

(6) It can turn on or off measuring sound.

(7) It can warn when high body temperature is taken.

PRODUCT DESCRIPTION



(1) START BUTTON (ON) : Used to power on the thermometer and to measure body temperature or others.

(2) LCD : Displays normal working or error status when it starts, and shows measured temperature in Celsius (℃) or Fahrenheit (℉).

(3) MEMORY BUTTON (MEM) : Used to load stored data of temperature and change modes.

(4) SENSOR (PROBE) : Detects heat released from skin.

HOW TO MEASURE

A. Preparations before use

(1) Please learn how to use from the manual.

(2) See through LCD if each button works properly, pressing one by one.

(3) Check if SENSOR (PROBE) is not contaminated.

(4) Check if the batteries (CR2032, 3V) are installed properly.

(5) Check if surrounding temperature is 10 to 40 ℃, which shows normal operating environment.

B. How to use your Infopia ThermoChecker

(1) How to measure body temperature

① Press START BUTTON (ON BUTTON).

② Forehead mode ( ) appears in LCD, shown as Figure.

③ Press START BUTTON (ON BUTTON) 2 to 3 cm off the center of a person's forehead.

④ Hold Infopia ThermoChecker still in hand until it be eps once.

⑤ All done. Check body temperature in LCD.

⑥ When measuring again, after the icon in LCD as in ② appears, follow step ② to ⑤.

⑦ If body temperature is at 38.1 to 38.9 ℃, Infopia Th ermoChecker beeps three times only when the buzzer is ON. When body temperature is over 39 ℃, the warning sound of beep continues for 3 to 4 seconds.

(2) How to measure other temperature

① Press START BUTTON (ON BUTTON).

② Change modes by pressing MEMORY BUTTON (MEM) for about three seconds, and thermometer icon ( ) appears in LCD.

③ Press START BUTTON (ON BUTTON) 2 to 3 cm off the object to be measured.
④ Hold Infopia ThermoChecker still in hand until it be eps once.
⑤ All done. Check temperature in LCD.

⑥ When measuring again, after the icon in LCD as in ② appears, follow step ② to ⑤.

Useful tips

- Clean the probe for accurate measurement at all times. Be careful not to damage the probe.
- Wipe the probe with a soft cloth with alcohol or sterilized cotton.
- Store the unit at the case at all times after use.
- Store the unit at the safe place apart from fire, humidity, direct sunlight, dust, salinity, slope, vibration, shock, etc.
- Avoid the contact with water or liquid.
- Avoid the extremely cold(under -20℃) or high(over 50℃) place as well as high humid place(-95% RH) for storage.
- The normal operational temperature is from 10℃ to 40℃.
- Do not disassemble the unit arbitrarily.
- Avoid the measurement under the air-conditioner or heater.

CHANGING THE MEASUREMENT MODE

(1) Press MEMORY BUTTON (MEM) when Infopia ThermoChecker is on.

(2) Check if the icon in LCD is thermometer-shape ( ) or forehead-shape ( ).

BUZZER ON/OFF

(1) Press START BUTTON and MEMORY BUTTON at the same time.

(2) LCD screen flickers twice and the buzzer toggles on and off.

BATTERY REPLACEMENT & INSTALLATION

(1) When the symbol appears on the LCD panel, the battery needs to be replaced.

(2) Remove the battery cover in the bottom.

(3) Remove the battery.

(4) Put in a new battery with the plus (+) side on the top.

(5) Close the battery cover.

(6) Check that the picture(5) is activated on the LCD panel.

※ Battery specification : DC 3.0V CR2032 X 1

Infopia infrared thermometer is supplied with a lithium battery that can operate for more than 5,000 measurements.

Please keep the batteries out of children. When children swallow a battery, consult your doctor immediately.

MEMORY

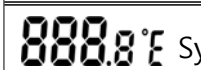
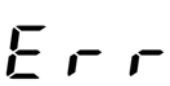
(1) Press & release the mem button.

(2) The first memory cell number will display then the stored temperature(latest measurement) will be followed.

(3) Press & release the mem button again and it will display the second last measurement and so on up to 10 measurements.

(4) A new measurement can be taken, even in memory mode.

TROUBLE SHOOTING

Fault or fault symbol	Fault description	Corrective measure
 Symbol is displayed or no display on the LCD panel.	The battery has run out. Incorrect battery polarity	Replace the battery. Please note : The (+) side of the battery must be upwards.
Symbol is displayed	The temperature measured is outside the measuring range (34℃ ~ 42.4℃) LO : Too low HI : Too high	Check that the SENSOR(probe) tip is clean and that the thermometer is placed on the forehead.
Symbol is displayed		
Symbol is displayed	The battery has run out.	Replace the battery. Please note : The (+) side of the battery must be upwards.
 Symbol is displayed	The ambient temperature is outside the operating temperature range. (10~40℃)	Let the thermometer rest at operating temperature for 30 minutes prior to use.
Symbol is displayed	If the body temperature is measured between 38.1℃ and 38.9℃ as the buzzer is ON, the alarm is activated 3 times (Beep).	The body temperature is measured abnormally high. Measure the body temperature at the medical center for accurate diagnosis.
Symbol is displayed	If the body temperature is measured over 39℃ as the buzzer is ON, the alarm is activated for 3~4 seconds. (Continuous beeping)	

STORAGE AFTER USE

(1) Clean the probe for accurate measurement at all times. Be careful not to damage the probe.
(2) Wipe the probe with a soft cloth with alcohol or sterilized cotton.
(3) Store the unit at the case at all times after use.
(4) Store the unit at the safe place apart from fire, humidity, direct sunlight, dust, salinity, slope, vibration, shock, etc.
(5) Avoid the contact with water or liquid.
(6) Avoid the extremely cold(under -20℃) or high(over 50℃) place as well as high humid place(-95% RH) for storage.
(7) The normal operational temperature is from 10℃ to 40℃.
(8) Do not disassemble the unit arbitrarily.
(9) The unit is intended for private household use only.

SPECIFICATIONS

PART		SPECIFICATIONS	
Body	Method of Measurement	Detection by Thermopile sensor of ultrared light released by forehead	
	Measuring Range	Living mode : 0 ~ 100℃	
		Body temperature mode : 34 ~ 42.4 ℃	
	Resolution	0.1℃	
	Measuring Time	Within 30 seconds	
	Storage Condition	-20℃~50℃, Humidity 15~95%RH Atmospheric Pressure : 70 kPa to 106 kPa	
	Operating Condition	10℃ ~ 40℃, Humidity 15~95%RH Atmospheric Pressure : 70 kPa to 106 kPa	
	Accuracy (Laboratory)	36℃ ~ 39℃	± 0.2℃
		Other range	± 0.3℃
	Safety Device	Displays low battery warning (⌧) if power is 2.6±0.1V	
	Buzzer ON/OFF	Switch of BUZZER ON/OFF by pressing ON BUTTON and MEMORY BUTTON at the same time.	
Dimension Weight		26 ㎜(W) x 17.7 ㎜(H) x 131.5 ㎜(L) 50g	
Battery		DC 3V (Li, CR2032)	

1. This product has feature of continuous measuring. Please refer to page 8 at the user guide.
2. For the purposes of improvement, the specifications are subject to change without notice.

LABEL OF PRODUCTS, STORAGE CASE OR INNER BOX

Infrared Forehead Thermometer

Model : DT-060

Rating: 3V ⎓ (Internally powered equipment)

Battery: Lithium battery CR2032 x 1 EA

Made in korea

SN

Please read the user's manual carefully before use.

CE

infopia Co.,Ltd.

891 Hogye-Dong, Dongan-Gu,
Anyang, Kyunggi, 431-080, Korea

EC REP

MICHAEL ZAHRADNIK

Mauerbachstrasse 18, 1140
wienlvienna, Austria

LABEL IN PRODUCT'S BATTERY COVER

SN

Infrared Forehead Thermometer

Model : DT-060

infopia Co.,Ltd.

891 Hogye-Dong, Dongan-Gu,
Anyang, Kyunggi, 431-080, Korea

EXPLICATION OF SYMBOL

Serial Number	Manufacture Date	Attention, consult accompanying documents

CE Marking	Manufacturer	European Representative

PURPOSE OF USE

(1) Purpose of use : This is a "medical device that measures body temperature" by detecting ultrared light released by skin such as forehead.

(2) Name & Model No.
Name of Classification : Infrared Forehead Thermometer Model No : DT-060.

(3) Name of Manufacturer & Address
Name of Manufacturer : Infopia Co., Ltd
Address : 891 Hogye-Dong, Dongan-Gu, Anyang, Kyunggi, 431-080, Korea

(4) License No : 2762

(5) Product License No : 10-1299

MANUFACTURER GUARANTEE

Infopia Co., Ltd warants the product as follows.

1. Customers can contact the dealer or the manufacturer for repair in case the product malfuctions.
2. Infopia's detail warrant information is as below.
   (1) The warant period is two years from the original consumer purchase. When the purchase date is not identified, the period is considered to start from three months after the manufacture date.
   (2) Infopia provides free services within the warrant peri od. Paid services will be

made when:

- customers use commodities or parts without Infopia's guarantee.
- customers have faults such as damages caused by liquid contact, disassembling, falling down, and/or deformation after normal usage.
- any third-party personnel Infopia does not guarantee repair the product.
- consumable parts have life expired.
- the product has worn out after normal usage or has fault that does not affect normal usage.
- malfunction has occurred due to natural disaster such as fire, flooding, damage from sea wind and/or lightning.

(3) Customers can get a new product when failure of performance or function has occurred within ten days from the purchase date.

(4) Customers cannot take the warrant when they repair the product at any unauthorized center Infopia does not support.

(5) The warrant period does not prolong after free or paid service provided.

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC EMISSIONS

The DT-060 is intended for use in the electromagnetic environment specified below. The customer or the user of the DT-060 should assure that it is used in such an environment.

Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The DT-060 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The DT-060 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Not applicable	

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC IMMUNITY

The DT-060 is intended for use in the electromagnetic environment specified below.
The customer or the user of the DT-060 should assure that it is used in such an environment.

Immunity test	**IEC 60601 Test level**	**Compliance level**	**Electromagnetic environment -guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV Contact ±8 kV air	±6 kV Contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5 % U_T (> 95 % dip in U_T) for 0.5cycle 40 % U_T (60 % dip in U_T) for 5 cycle, 6 cycle 70 % U_T (30 % dip in U_T) for 25 cycle, 30 cycle <5 % U_T (< 95 % dip in U_T) for 5 s	Not applicable	Mains power quality should be that of a typical commercial or hospital environment. If the user of the DT-060 image intensifier requires continued operation during power mains interruptions, it is recommended that the DT-060 image intensifier be powered from an uninterruptible power supply.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A / m	3 A / m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE U_T is the a.c. mains voltage prior to application of the test level.

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC IMMUNITY

The DT-060 is intended for use in the electromagnetic environment specified below.

The customer or the user of the DT-060 should assure that it is used in such an environment.

Immunity test	**IEC 60601 Test level**	**Compliance level**	**Electromagnetic environment -guidance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	Not applicable 3 V / m	Portable mobile RF communications equipment should be used no closer to any part of the DT-060, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = [\frac{3.5}{V_1}]\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V / m 80 MHz to 2.5 GHz	80 MHz to 2.5 GHz	$d = [\frac{3.5}{E_1}]\sqrt{P}$ 80 MHz to 800 MHz $d = [\frac{7}{E_1}]\sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as deter-mined by an electromagnetic site survey,[1] should be less than the compliance level in each frequency range.[2] Interference may occur in the vicinity of equipment marked with the following symbol :

NOTE 1) At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2) These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

[1] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the EUT is used exceeds the applicable RF compliance level above, the EUT should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the DT-060.

b Over the frequency range 150 kHz to 80MHz, field strengths should be less than [V1] V / m.

Recommended separation distances between portable and mobile RF communications equipment and the DT-060

The DT-060 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the DT-060 can help Prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the DT-060 as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter [W]	Separation distance according to frequency of transmitter [m]	
	80 MHz to 800 MHz $d = [\frac{3,5}{E_1}]\sqrt{P}$	800 MHz to 2.5 GHz $d = [\frac{7}{E_1}]\sqrt{P}$
	E1= 3 V / m	E1= 3 V / m
0.01	0.11	0.23
0.1	0.36	0.73
1	1.16	2.33
10	3.68	7.37
100	11.66	23.33

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m)can be estimated using the equation applicable to the frequency of the transmitter, where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1) At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2) These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

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